WHAT IS CLAIMED IS

1. A misfire detector comprising:

a revolution detection means for measuring a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processing means for detecting misfiring of the internal-combustion engine by processing the time period, wherein said signal-processing means comprises:

two filters having the same sensitivity to a frequency resulting from misfiring, and differing in the sensitivity to frequencies adjacent to said frequency, and a judgment means for judging that a misfire has occurred when a ratio or difference between outputs of the two filters stays within a fixed range and one or both of the two filters have respective outputs exceeding a threshold value.

2. A misfire detector comprising:

a revolution detection means for measuring a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processing means for detecting misfiring of the internal-combustion engine by processing the time period, wherein the signal-processing means comprises:

a first filter whose sensitivity to frequency components resulting from misfiring is 0 and whose sensitivity to frequencies adjacent to said corresponding frequency component is not 0,

a second filter having its maximum sensitivity to the frequency components resulting from misfiring, and

a judgment means for judging that a misfire has occurred when an output of the first filter stays within a fixed range and an output of the second filter exceeds a threshold.

3. A misfire detector comprising:

a revolution detection means for measuring a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processing means for detecting misfiring of the internal-combustion engine by processing the time period, wherein said signal-processing means comprises:

a first filter which outputs an index indicating how close an input signal to the filter is with respect to a frequency resulting from misfiring,

a second filter which outputs an amplitude of its input signal, and

a judgment means for judging that a misfire has occurred if an output of the first filter stays within a fixed range and an output of the second filter exceeds a threshold.

4. A misfire detector as set forth in Claim 1,

wherein said signal-processing means further comprises:

an output memory into which several past outputs of either of said first and second filters are stored,

a data size comparison means for comparing magnitude between values which have been stored into said output memory, and

a misfiring-cylinder identification means by which, after the judgment means has judged that a misfire is occurring, of all explosion cylinders existing when a

specific relationship in magnitude between said values is satisfied, only a cylinder that has experienced a fixed number of explosion strokes within a fixed time is identified as the misfiring cylinder.

5. A misfire detector as set forth in Claim 2,

wherein said signal-processing means further comprises:

an output memory into which several past outputs of either of said first and second filters are stored,

a data size comparison means for comparing magnitude between values which have been stored into said output memory, and

a misfiring-cylinder identification means by which, after the judgment means has judged that a misfire is occurring, of all explosion cylinders existing when a specific relationship in magnitude between said values is satisfied, only a cylinder that has experienced a fixed number of explosion strokes within a fixed time is identified as the misfiring cylinder.

6. A misfire detector as set forth in Claim 3,

wherein said signal-processing means further comprises:

an output memory into which several past outputs of either of said first and second filters are stored,

a data size comparison means for comparing magnitude between values which have been stored into said output memory, and

a misfiring-cylinder identification means by which, after the judgment means has judged that a misfire is occurring, of all explosion cylinders existing when a specific relationship in magnitude between said values is satisfied, only a cylinder

that has experienced a fixed number of explosion strokes within a fixed time is identified as the misfiring cylinder.

7. A misfire detector comprising:

a revolution detector to measure a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processor to detect misfiring of the internal-combustion engine by processing the time period, wherein said signal-processing comprises:

two filters having the same sensitivity to a frequency resulting from misfiring, and differing in the sensitivity to frequencies adjacent to said frequency, and

a judgment circuit to judge that a misfire has occurred when a ratio or difference between outputs of the two filters stays within a fixed range and one or both of the two filters have respective outputs exceeding a threshold.

8. A misfire detector comprising:

a revolution detector to measure a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processor to detect misfiring of the internal-combustion engine by processing the time period, wherein said signal-processor comprises:

two filters having the same sensitivity to a frequency resulting from misfiring, and differing in the sensitivity to frequencies adjacent to said frequency, and

a judgment circuit to judge that a misfire has occurred based on analyzing outputs of the two filters.

9. A misfire detector comprising:

a revolution detector to measure a time period required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a single-processor to detect misfiring of the internal-combustion engine by processing the time period,

wherein said signal-processor comprises:

a first filter whose sensitivity to frequency components resulting from misfiring is 0 and whose sensitivity to frequencies adjacent to said frequency components is not 0,

a second filter having its maximum sensitivity with respect to the frequency components resulting from misfiring, and

a judgment circuit to judge that a misfire has occurred based on an analysis of outputs of the first filter and second filters.

10. A misfire detector comprising:

a revolution detector to measure a time required for a crankshaft of an internal-combustion engine to revolve for a given angle, and

a signal-processor to detect the misfiring of the internal-combustion engine by processing the time period, wherein said signal-processor comprises:

a first filter which outputs an index indicating how close an input signal to the filter is with respect to a frequency resulting from misfiring,

a second filter which outputs an amplitude of its input signal, and

a judgment circuit to judge that a misfire has occurred based on analysis of the index and the amplitude from the first and second filters.